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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,359	04/12/2004	David G. King	2003-0782.02	3069

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EXAMINER

MARTIN, LAURA E

ART UNIT	PAPER NUMBER
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2853

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03/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/822,359	Applicant(s) KING ET AL.	
	Examiner LAURA E. MARTIN	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 10, 11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruch et al. (US 6517184 B1) in view of Barbour et al. (US 6476928 B1).

Bruch et al. disclose the following claim limitations:

As per claim 1: a housing having an array of nozzles (figure 4, elements 400 and 410); data stored in the printhead memory, said data including a location of at least one missing or malfunctioning nozzle of said array of nozzles (column 9, lines 47-64 and column 14, line 63-column 15, line 5) (the numbers correspond to specific nozzles).

As per claim 4: the printhead is adapted to be installed into a printer having firmware capable of reading said data from said printhead memory (column 14, line 63-column 15, line 5).

As per claim 5: the printer is adapted to use said data to format print jobs (column 14, line 63-column 15, line 5).

As per claim 6: providing a printhead having a housing including an array of nozzles (figure 4, elements 400 and 410) and storing data in a printhead memory, said data including a location of at least one missing or malfunctioning nozzle of said array of

nozzles (column 9, lines 47-64 and column 14, line 63-column 15, line 5) (the numbers correspond to specific nozzles).

As per claim 10: the step of installing said printhead having firmware capable of reading said printhead memory (column 14, line 63-column 15, line 5).

As per claim 11: the firmware reads said printhead memory and a formatter formats a print job based on the data (column 14, line 63-column 15, line 5).

As per claim 13: the storing step includes performing a standard functional test (column 14, line 63-column 15, line 5).

As per claim 14: the storing step includes initiating an automated detection system (column 13, lines 3-28).

As per claim 15: a housing having an array of nozzles (figure 4, elements 400 and 410); a printhead memory storing data including a status of at least one nozzle of said array of nozzles (column 9, lines 47-64 and column 14, line 63-column 15, line 5), wherein said printhead is adapted to be installed into a printer having firmware capable of reading said data from said printhead memory and passing said data into a formatter formatting print jobs according to said data (column 14, line 63-column 15, line 5).

Bruch et al. do not disclose the following claim limitations:

As per claims 1, 6, and 15: a printhead memory disposed on or within said housing.

Barbour et al. disclose the following claim limitations:

As per claims 1, 6, and 15: a printhead memory disposed on or within said housing (figure 3, element 306).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printhead and methods taught by Bruch et al. with the disclosure of Barbour et al. in order to print a high quality image in an efficient manner and to provide efficient and localized control of the printhead. It is well known to put memories in different locations within a printer.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruch et al. (US 6517184 B1) and Barbour et al. (US 6476928 B1), and further in view of Kojima (US 6719391 B2).

Bruch et al. as modified disclose the following claim limitations:

As per claim 12: a method of making a printer.

Bruch et al. as modified do not disclose the following claim limitations:

As per claim 12: compensating for said at least one missing or malfunctioning nozzle by shingling.

Kojima discloses the following claim limitations:

As per claim 12: compensating for said at least one missing or malfunctioning nozzle by shingling (column 9, lines 10-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Bruch et al. as modified with the disclosure of Kojima in order to provide a higher quality printed image and to reduce banding.

Response to Arguments

Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive.

Applicant argues that Bruch et al. do not disclose storing the location of at least one missing or malfunctioning nozzles of said array of nozzles; however, the examiner disagrees. In column 9, lines 47-64 and column 14, line 63-column 15, line 5, Bruch et al. disclose each nozzle to be associated with a number between 1 and 524. In step S10, numbers of nozzles that are malfunctioning are stored in a memory device. These numbers relate to a specific nozzle, said nozzle having a location that is noted the number with which it is associated.

As disclosed above, it would have been obvious to one of ordinary skill in the art to modify the invention of Bruch et al. with the location of a memory device taught by Barbour et al. in order to improve image quality and to provide efficient and localized control of the printhead. It is also well known to put memory devices in different locations within a printer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA E. MARTIN whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. E. M./

Laura E. Martin

/Manish S. Shah/
Primary Examiner, Art Unit 2853